



SONOMA COUNTY SHERIFF'S DEPARTMENT

Special Operations Unit

Tactical Dispatch Team

Technical Support Team

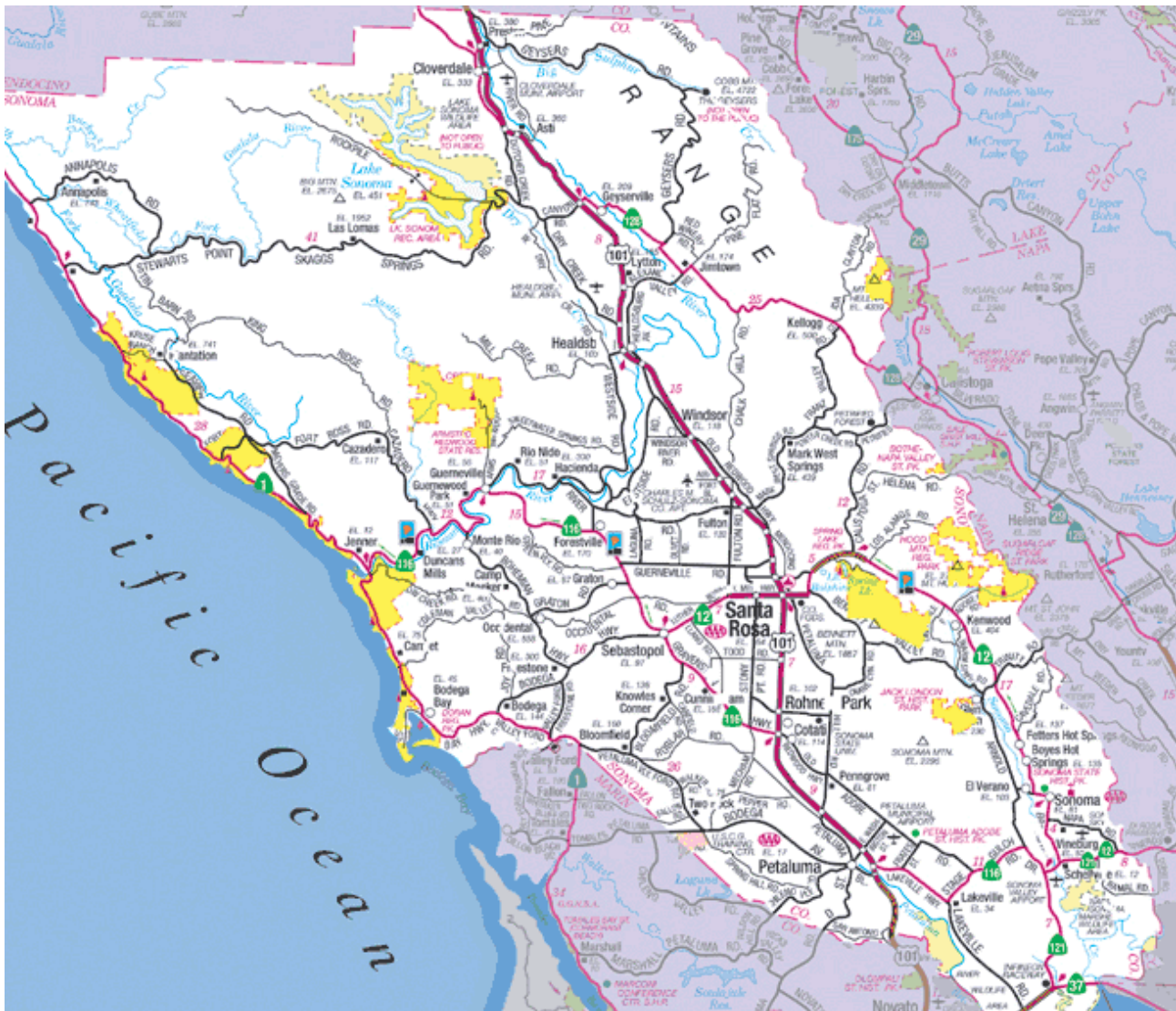
2796 Ventura Avenue

Santa Rosa, CA 95403 (707) 527-2511

Bill Cogbill
Sheriff/Coroner

CROSS BAND REPEATER RADIO INTEROPERABILTY PROPOSAL

V3 8/13/09



As we all who live and work in here, Sonoma County is large and diverse, 1608 square miles of beach, mountains, rivers and cliffs. Home to nearly 500,000 people.

We are also home to the 100 year flood, 1986, 1995, two in 1997 and the most recent, New Years Eve 2006.



AP / Paul Sakuma



The County's public safety organizations, Fire, Police, Sheriff, CHP, CDF, Ambulance, State and County Parks, all operate wide area radio communications systems.

Unfortunately, these radio systems are incompatible, a grim reality when different disciplines need to be able to talk directly to each other.

This became necessary when Sheriff’s Deputies, State Park Rangers and Fire Personnel where conducting boat rescues and evacuations along the Russian River and could not directly speak to each other. Often they could see each other and were engaged in the same mission, but could not directly communicate.

Fire / Ambulance / CDF / REDCOM / Rohnert Park DPS (Police/Fire) / FBI	VHF ~ 155 mHz
Sheriff/Police (Except Rohnert Park) / Busses	UHF ~ 460 mHz
CHP/County Parks/County Roads/Water Agency	Low Band ~ 42 mHz
State Parks / West County Transit / CalTrans	800 mHz

This radio interoperability was arranged via a patch between REDCOM and the Sheriff’s Communication Center, but that too caused problems, tying up channels that were needed for other operations, and the two Dispatchers were unable to talk to each other across this “patch,” which caused confusion.

The Emergency Operations Center wasn’t able to directly communicate with all the assets in the disaster area.

Additionally, CHP was deployed to assist with road closures and traffic control. They could not talk directly to the Sheriff’s Deputies or any one else.

Disasters also require traditionally “non public safety” assistance, such as the Roads or Public Works Departments, State or County Parks or the Water Agency. Often, school and transit busses are pressed into service to evacuate refugees.

This inability to communicate directly between field personnel isn’t limited to only disasters. Sonoma County Law Enforcement has departments operating in four separate radio frequency bands. Nothing is in place for Officers with disparate radios to talk directly to each other.

Pursuits are a perfect example. Santa Rosa Police (UHF) starts the pursuit, the Sheriff's Department (UHF) gets involved, the pursuit takes to the freeway, CHP (Low Band) gets involved, into Rohnert Park (VHF). All of these Officers need to be able to directly coordinate their actions to safely and effectively do their jobs.

Particularly in the rural areas of the County, Fire, Sheriff, CHP, Park Rangers and Paramedics often respond and regularly operate together. Their radios all operate in non-compatible frequency bands. Field personnel are forced to resort to listing to the other agency personnel on a scanner, while talking on their own radio and vice/versa.

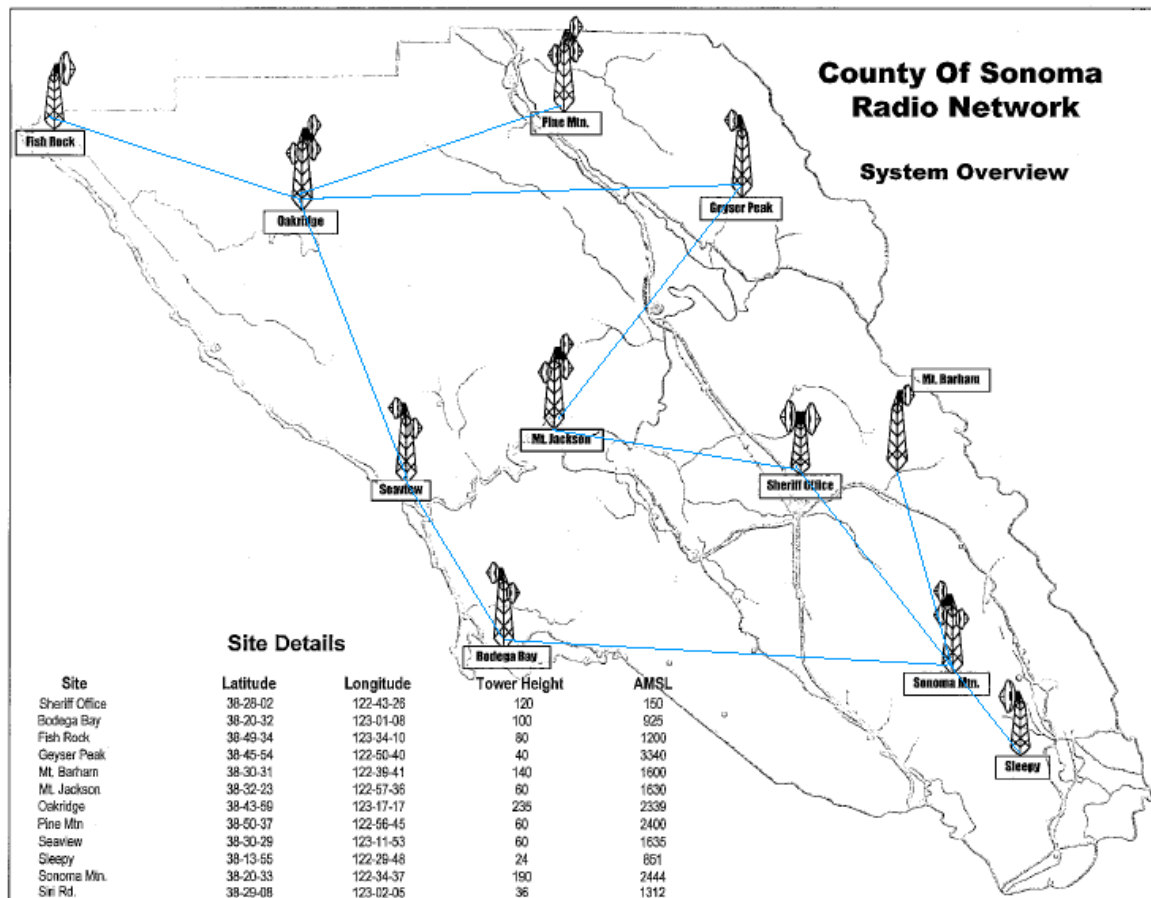
ORIGINAL PROPOSAL (*June 2006*)

To resolve this demonstrated problem, we propose to build and install a multi-band, cross-channel radio repeater on Mt. Jackson, 1600 feet above Guerneville.

This repeater will operate 24 hours a day, 7 days a week on an "as needed" basis for inter discipline communications.

It will consist of a Low Band, VHF, UHF and an 800 mHz receiver, simultaneously feeding a Low Band, VHF, UHF and 800 mHz transmitter, creating a "virtual" common channel for all public safety and traditionally non-public safety but municipal users to be able to talk directly with one and other.

Mt. Jackson was chosen as it covers the area of most need, the lower Russian River. Mt. Jackson also covers the 101-corridor area well from Petaluma to Cloverdale with signal levels that should be acceptable for mobile radios, those in vehicles.



The repeater will appear as an icon on the Modu-Com radio consoles in both the Sheriff's Communications Center and REDCOM. Communications would be recorded just like any other channel. Any communications center could/should monitor the virtual channel as needed.

Every agency is welcome to participate by simple programming the appropriate frequencies into their radios, whichever band they happen to be.

Every other communication center would be welcome to program the appropriate channels into their radios to control their particular assets.

This system would have the added benefit of being "stand alone." While connected to the county microwave back-bone, it would not be dependant on it. Any agency that experienced an outage of their primary base radio system could use this system until repairs to their primary system could be made, including having another communications center dispatch their assets.

MAY 2009 UPDATE...

The original proposal was approved, expanded and funded by the “Gang of Five” in June 2006 to build two separate repeaters. The originally proposed site on Mount Jackson, plus a second site on Sonoma Mountain.

The U.S. Department of Homeland Security Funds were used to purchase the radio equipment as specified for both sites, which have been delivered.

The Sheriff’s Department, Information Systems-Communications-Radio has been working to obtain frequencies for both sites. This has been a major hurdle.

CHP was able to provide and license one frequency pair for Mount Jackson, but was unable to find a second frequency pair for Sonoma Mountain. Cal Fire had no frequencies available for either site, nor did State Parks.

We opened discussions with then Cal OES, now CalEMA and settled on the frequency plan noted below for VHF, UHF and 800 mHz.

Just yesterday we worked out an agreement with Marin County to transfer licensing of one low band frequency that they have vacated.

AUGUST 13th 2009 UPDATE...

CHP would not allow the use of their 42.68 frequency as an input on Sonoma Mountain due to the proximity to 42.66 also on Sonoma Mountain and the input for their Napa Office “Grape” channel.

We proposed using CLEMARS7/LLAW3, 45.86, as an input to 39.72, John Lemmon at OCIO-PSCD suggested we use the 39.46 output (CLEMARS6/LLAW1) with the 45.86 input. This is acceptable.

On 8/11/09 CalEMA conducted a teleconference on licensing interop frequencies. Outlined was a procedure that included submitting State and FCC forms to CalEMA, which will forward to OCIO-PSCD, who will forward to the FCC, back to OCIO-PSCD then back to us.

Our documents include:

- **Current CHP license for 39.80 on Mount Jackson;**
- **New TD-400 for the VHF, UHF and 800 channels, to include the re-banded new 800 channels for Mount Jackson;**
- **New TD-400 for the Low, VHF, UHF and 800 channels, to include re-banded new 800 channels for Sonoma Mountain;**
- **Our previously submitted FCC-601 for the VHF, UHF and 800 channels for both mountain tops;**
- **A new FCC-601 for 39.46 on Sonoma Mountain.**


In prior discussions with CaleMA, we are in agreement that we are currently authorized for mobiles pursuant to the “blanket authorization” from the FCC (see FCC 00-348, released 10/10/2000, paragraph 90) for the LLAW, VCALL/TAC, UCALL/TAC and 8CALL/TAC channels. CHP is allowing us to use their 42.26 KA4993 for our Mt Jackson input.

The current plan is to deploy the two repeaters as indicated below.

	Low		VHF		UHF		800	
	Mountain Top Transmit	Mountain Top Receive	Mountain Top Transmit	Mountain Top Receive	Mountain Top Transmit	Mountain Top Receive	Mountain Top Transmit	Mountain Top Receive
Sonoma Mountain	39.46 <i>PL 162.2</i> LLAW1	45.86 <i>PL 162.2</i> LLAW3	151.1375 <i>PL 151.4</i> VTAC-1	158.7375 <i>PL 151.4</i> V-TAC-3	453.2125 <i>PL 151.4</i> U-Call	458.2125 <i>PL 151.4</i>	867.5125 <i>PL 151.4</i>	822.5125 <i>PL 151.4</i> I-Call
Mount Jackson	39.80 <i>PL 162.2</i>	42.26 <i>PL 162.2</i>	154.4525 <i>PL 162.2</i> V-TAC-2	159.4725 <i>PL 162.2</i> V-TAC-4	453.8625 <i>PL 162.2</i> U-TAC-3	458.8625 <i>PL 162.2</i>	868.0125 <i>PL 162.2</i>	823.0125 <i>PL 162.2</i> I-TAC-4

If there is any questions or additional documents that we need to provide, please do not hesitate to call.

Sincerely;

A handwritten signature in black ink, appearing to be 'D. Smiley', with a large loop and a diagonal slash.

Dennis Smiley

Detective Sergeant

Criminal Intelligence Unit

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